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Marketing via Social Networking Sites: A Study of Brand-Post Popularity for Brands in Singapore

Alton Y. K. Chua, and Snehasish Banerjee

Abstract—Businesses often rely on social networking sites such as Facebook for marketing purposes. They create brand pages to disseminate brand-related posts among potential customers. Some brand-posts become popular by attracting substantial likes, comments and shares. In contrast, others remain largely ignored. To address this conundrum, this paper investigates the extent to which provision of incentives, as well as vividness and interactivity of brand-posts are related to their popularity in Facebook. Drawing data for brands in Singapore, three key findings are gleaned. First, brand-posts that provide incentives were unlikely to become popular. Second, vivid brand-posts were more likely to become popular vis-à-vis those that lacked vividness. Third, increase in interactivity of brand-posts up to an optimum level resulted in increasing popularity, beyond which there was a negative relationship.

Index Terms—Facebook, marketing, popularity, social networking sites

I. INTRODUCTION

THE advent of Web 2.0 has made the Internet largely participatory in nature. It allows users not only to read but also to contribute content freely. A popular form of Web 2.0 applications includes social networking sites (SNS). They enable users to create their profiles within a bounded system, forge connections with others, as well as traverse through connections made by users within the system [1]. The popularity of SNS such as Facebook has been growing rapidly over the years. While awareness of Facebook among Internet users globally is almost 100%, more than 60% of them constitute its registered members [2].

The growing popularity of SNS has attracted substantial scholarly interests. A popular research theme involves investigating users' motivations to use SNS [3]-[5]. Entertainment, convenience, and need to maintain relationships were found as some of the key motivating factors [6], [7]. Yet another research theme focuses on SNS from cultural perspectives [8]-[10]. In particular, Asians and Americans were found to subtly differ in their use of SNS [10], [11].

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Amidst these scholarly efforts, a research theme that has started to kindle scholarly interests only recently is the use of SNS by businesses for marketing purposes. The popularity of SNS suggests that they could be a viable avenue for businesses to foster relationship with potential customers in the SNS community [12]. For this purpose, businesses could create brand pages in SNS, and submit posts related to the brand. In return, interested customers could become fans of the brand pages. They could further express their opinion about brand-posts through activities such as liking, commenting and sharing that are facilitated in most SNS. Customers could express positive attitude towards brand-posts by liking the entries. They could also voice their feelings by leaving comments on brand-posts. Customers could also show approval by sharing brand-posts on their profiles.

Businesses would conceivably want brand-posts in SNS to attract large volumes of likes, comments and shares. After all, brand-posts receiving substantial likes, comments and shares become popular among the SNS community, thereby resulting in greater exposure. Interestingly, more than half of all SNS users follow brand pages, and the number of brand pages followed is over 10 on average [2]. Despite users' tendency to follow numerous brand pages, not all brand-posts are guaranteed to become popular by attracting substantial likes, comments, and shares.

Prior studies suggest that the popularity of brand-posts could be driven by two factors. These include motivation of customers and the nature of brand-posts. A study on brand-related social media use suggested that customers should be motivated through incentives to engage in liking, commenting and sharing activities [13]. Furthermore, [12] suggested that brand-posts should be vivid and interactive in order to attract customers. Vividness of advertisement banners is known to promote click-through rates [14]. Perhaps, vivid brand-posts could entice customers to like, comment and share in SNS. Interestingly, investigation on the role of brand posts' interactivity has often yielded inconclusive findings [15]-[17].

In an attempt to augment extant literature in this nascent research theme, this paper seeks to investigate the extent to which provision of incentives, as well as vividness and interactivity of brand-posts in Facebook are related to their popularity. Specifically, brands in Singapore are considered in this paper. Popularity of brand-posts in Facebook is conceptualized as the volumes of likes, comments, and shares attracted by the entries. Specifically, this paper

investigates the following research questions pertaining to brand-post popularity for brands in Singapore:

RQ 1: How is the provision of incentives related to the volumes of (a) likes, (b) comments, and (c) shares attracted by brand-posts?

RQ 2: How is the vividness of brand-posts related to the volumes of (a) likes, (b) comments, and (c) shares attracted by the entries?

RQ 3: How is the interactivity of brand-posts related to the volumes of (a) likes, (b) comments, and (c) shares attracted by the entries?

Singapore, a city-state in Southeast Asia, is chosen as the context for this paper mainly due to its large user-base in Facebook. About 87% households in Singapore have access to the Internet [18]. The growing popularity of smartphones further serves as a fillip to Internet use. Smartphone penetration in Singapore is more than 85% [19]. Among smartphone users, SNS generally rank among the most popular applications [2]. It is no wonder Facebook penetration in Singapore is more than some 75% in relation to its online population [20]. Given the ubiquitous use of Facebook among Singaporeans, brands in Singapore offer an interesting context to investigate brand-post popularity.

The significance of this paper is two-fold. First, this paper could offer useful cues to businesses on ways to use SNS for marketing purposes. It is conceivable that businesses would want to ensure that their brand-posts become the cynosure of their target customers. However, extant literature does not offer a comprehensive understanding of the determinants of brand-post popularity. In this vein, this paper serves as a dovetailing effort to the few related studies such as [12] and [17].

Second, even though much is known about users' motivation to use SNS such as Facebook [3]-[5], relatively little is known about the extent to which businesses could engage users. Through the case of brand-post popularity for brands in Singapore, this paper could suggest the extent to which provision of incentives, as well as vividness and interactivity of brand-posts in Facebook are related to their likelihood to attract likes, comments and shares from the SNS community.

The remainder of this paper is organized as follows. The following section reviews the related literature, which culminates into the research hypotheses. The methods and the results are presented next. Thereafter, three key findings gleaned from the results are discussed. The paper concludes by highlighting its significance and limitations.

II. LITERATURE REVIEW

The advent of Web 2.0 has dramatically changed the ways businesses communicate with their target customers. Instead of relying on traditional tools such as advertisements in the mainstream media, businesses are increasingly relying on SNS as marketing tools to connect with customers. A key strength of SNS in marketing is that they not allow businesses to communicate with customers, but also enable customers to communicate with one another as well as the businesses [21], [22]. Conceivably, SNS such as Facebook are increasingly deemed as useful avenues for businesses to foster relationships with customers. Businesses create brand

pages, and submit posts containing brand-related photos, videos, or anecdotes. Brand fans in return interact with the brand-posts through likes, comments and shares, thereby shaping the popularity of the entries among the SNS community [12].

Despite the potential of SNS as marketing tools, not all posts attract substantial attention from its users. Some posts could allure users into liking, commenting and sharing while others could remain largely overlooked. For businesses, the ways to make brand-posts attractive to likes, comments and shares from potential customers are largely unknown. To aggravate the problem, customers using SNS are generally "*impatient*" with "*a short attention span, a lot of choices, and a low barrier to switching*" [23, p. 119]. Drawing from related studies such as [12], [14], and [16], this paper therefore attempts to investigate the extent to which provision of incentives, as well as vividness and interactivity of brand-posts are related to their popularity. Popularity is conceptualized as the volumes of (a) likes, (b) comments, and (c) shares attracted by brand-posts.

A. Provision of Incentives

Scholars have attempted to identify various groups of SNS users based on their level of activity. Specifically in the context of brand-related SNS use, [13] identified three groups of users, namely, consumers, contributors, and creators. Consumers passively browse brand-related information without any substantial involvement. Contributors actively join brand pages as fans to evaluate brand-related information. This group of SNS users is expected to like and contribute comments on brand-related information. Creators comprise the most enthusiastic group who could create brand-related information. This group of SNS users is perhaps likely to share brand-posts, thereby publishing brand-related information in their SNS profiles. Businesses would conceivably want customers to interact with brand-posts as creators and contributors. A possible way to entice consumers to act as either contributors or creators could be the provision of incentives [13], [24].

For the purpose of this paper, provision of incentives suggests that SNS users would expect some remuneration in return for engaging in liking, commenting and sharing activities towards brand-posts. Prior studies have found different types of incentives to be effective in promoting engagement and participation. For example, [24] suggested that monetary incentives such as prizes could be useful to promote participation. Job-related incentives are also known to promote users' intention to contribute in Wikipedia [25]. Furthermore, studies such as [26] found that developers participate in open-source software development mainly because obtaining specific software serves as their personal incentives. Applying these findings in the context of brand-posts, it seems that entries that incentivize customers are more likely to become popular in Facebook vis-à-vis those that do not. Hence, with respect to RQ 1, the following are hypothesized:

H1a: Brand-posts that provide incentives will attract more likes than those that do not provide incentives.

H1b: Brand-posts that provide incentives will attract more comments than those that do not provide incentives.

H1c: Brand-posts that provide incentives will attract more shares than those that do not provide incentives.

B. *Brand-posts' Vividness*

Vividness refers to the way a medium could appeal to individuals' senses. It entails two sub-dimensions, namely, breadth and depth. Breadth refers to the number of different senses that a medium could engage, while depth is the degree to which the senses could be engaged [27]. A video is considered more vivid than a picture because the former stimulates both visual and aural senses, while the latter stimulates only the sense of sight [12]. Vividness could be incorporated into a medium by incorporating dynamic content such as animations and videos [17], [28].

Businesses often use vivid elements in the home page of their websites in order to enhance the richness of customers' experience [16]. For advertisements in television and the Internet, vividness has been found to attract attention [29], [30]. Vividness of advertisement banners is known to promote click-through rates [14]. Bearing the foregoing, it would seem that vivid brand-posts are more likely to become popular in Facebook compared with those that lag behind in terms of vividness. Hence, with respect to RQ 2, the following are hypothesized:

H2a: Vividness of brand-posts will be positively related to the volume of likes attracted by them.

H2b: Vividness of brand-posts will be positively related to the volume of comments attracted by them.

H2c: Vividness of brand-posts will be positively related to the volume of shares attracted by them.

C. *Brand-posts' Interactivity*

Interactivity is defined as the extent to which communication parties could act on one another, on the communication medium, and on the messages interchanged [15]. It entails five sub-dimensions, namely, playfulness, choice, connectedness, information collection, and reciprocal communication [31]. Interactivity in an online environment refers to participation and engagement via computer-mediated communication channels [32]. Specifically in the context of this paper, interactivity refers to the extent of two-way communication between businesses and customers, as well as among customers. A website URL is considered more interactive than simple text because unlike the latter, the former triggers a clicking action among readers.

Research findings on effects of interactivity on outcome measures have been generally inconclusive. Studies such as [16] suggested a linear effect of interactivity. In other words, the higher the interactivity of brand posts, the greater could be its popularity. However, [15] questioned if high levels of interactivity would always be beneficial in advertisements. Specifically, in the context of web-based advertisements, studies such as [17] suggested that there could be an optimal level of interactivity. Stated otherwise, increase in interactivity of brand-posts could result in increasing popularity only up to an optimum level, beyond which there could be a negative association. Hence, with respect to RQ 3, the following are hypothesized:

H3a: Interactivity of brand-posts will be curvilinearly

related to the volume of likes attracted by them.

H3b: Interactivity of brand-posts will be curvilinearly related to the volume of comments attracted by them.

H3c: Interactivity of brand-posts will be curvilinearly related to the volume of shares attracted by them.

III. METHODS

The procedure for data collection and analysis involved a four-step process. The first step involved identifying a set of top 50 businesses in Singapore that have brand pages in Facebook. These brands were identified on April 7, 2014 from Socialbakers (<http://www.socialbakers.com/facebook-pages/brands/country/singapore/>), a social media analytics platform that reports country-wise Facebook statistics. Specifically, top 50 brands in Singapore based on the number of local fans were identified. These brands spanned across diverse sectors such as convenience stores, food and beverage, fashion, telecommunication, as well as transport to name a few. The number of local fans for these brand pages ranged from some 57,000 to over 35 million.

The second step involved retrieving brand-posts submitted in Facebook by these 50 brands. Specifically, the most recent 100 brand-posts as of April, 2014 for all the 50 brands were identified. This yielded a collection of 5,000 brand-posts. From this initial pool, those that did not attract any likes, comments or shares were eliminated. Finally, a total of 4,350 brand-posts were used for analysis.

The third step involved coding the brand-posts in terms of provision of incentives, vividness and interactivity. Based on provision of incentives, brand-posts that attempted to motivate customers to like, comment or share by offering monetary incentives, prizes or discounts, were coded as 1. The rest were coded as 0. Based on vividness, brand-posts were dummy-coded into four categories ranging from 0 (minimum vividness) to 3 (maximum vividness). In particular, the vividness of brand-posts was coded 1 if they were pictorial in nature, 2 if the entries announced an upcoming offline event of the brand, and 3 if the entries contained videos [12], [16], [17]. The remaining non-vivid brand-posts were coded as 0. Based on interactivity, brand-posts were dummy-coded into four categories ranging from 0 (minimum interactivity) to 3 (maximum interactivity). Specifically, the interactivity of brand-posts was coded as 1 if they contained links to websites or required fans to vote for alternatives, 2 if the entries asked fans to take some actions such as liking, and 3 if the entries solicited answers to one or more question(s) [12], [16], [17]. The remaining non-interactive brand-posts were coded as 0.

The fourth step involved statistical analysis to address the three research questions through hypotheses testing. For this purpose, multiple regression analysis with ordinary least squares estimate was conducted. The independent variables include the two levels of incentives (0-1), the four levels of vividness (0-3), and the four levels of interactivity (0-3). For each of the three groups of the independent variables, the majority group was used as the baseline for comparison. The regression analysis was repeated thrice by taking the logarithm of the three dependent variables, namely, the volumes of (a) likes, (b) comments, and (c) shares attracted by brand-posts. For every given brand-post, the number of

fans for the corresponding brand page was taken as a control variable.

IV. RESULTS

Prior to analysis, the presence of multicollinearity was examined. For all the three dependent variables, tolerance values for all independent variables were found to be above the minimum acceptable threshold of 0.2. Therefore, multicollinearity was not a problem. The results of the multiple regression analyses are presented in Table I.

With respect to likes, the overall model was significant ($F = 89.81, p < 0.001$), explaining 14.20% variance of the dependent variable. With respect to comments, the overall model was significant ($F = 112.86, p < 0.001$), explaining 17.20% variance of the dependent variable. With respect to shares, the overall model was significant ($F = 87.54, p < 0.001$), explaining 13.90% variance of the dependent variable.

The control variable of number of fans was positively related to all the three dependent variables: likes ($\beta = 0.32, p < 0.001$), comments ($\beta = 0.30, p < 0.001$), and shares ($\beta = 0.28, p < 0.001$). It is not surprising that larger the fan base for a given brand, greater is the volume of likes, comments and shares attracted by its brand-posts. The outcomes pertaining to the hypotheses testing are discussed as follows.

TABLE I
RESULTS OF THE MULTIPLE REGRESSION ANALYSES

	Log Likes	Log Comments	Log Shares
#Fans	0.32***	0.30***	0.28***
Incentive (yes)	-0.08***	-0.02	-0.01
Vividness (0)	-0.12***	-0.03*	-0.14***
Vividness (2)	0.01	0.05***	0.04**
Vividness (3)	0.00	0.03*	0.04**
Interactivity (1)	0.01	0.04**	0.07***
Interactivity (2)	0.10***	0.29***	0.18***
Interactivity (3)	-0.04**	-0.03*	-0.03*
Model performance	$F = 89.81$ $R^2 = 14.20\%$	$F = 112.86$ $R^2 = 17.20\%$	$F = 87.54$ $R^2 = 13.90\%$

Baseline groups for comparison: Incentive (no), Vividness (1), Interactivity (0). Significance levels: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

A. Provision of Incentives

Provision of incentives was negatively related to the volume of likes ($\beta = -0.08, p < 0.001$). Contrary to expectation, brand-posts that provided incentives were found less likely to attract likes. Hence, H1a was not supported.

With respect to both comments and shares, provision of incentives did not have any significant relationship. In other words, the volumes of comments and likes attracted by brand-posts were independent of the provision of incentives. Hence, H1b and H1c were also not supported.

B. Brand-posts' Vividness

With respect to likes, non-vivid brand-posts had a significant negative relationship ($\beta_{\text{Vividness (0)}} = -0.12, p < 0.001$). However, the moderate and the high levels of vividness did not have any significant positive relationship

with the volume of likes. Hence, H2a was only partially supported. It appears that non-vivid brand-posts will almost certainly not attract likes. Yet, there is no guarantee for vivid brand-posts to attract likes.

With respect to comments, non-vivid brand-posts had a significant negative relationship ($\beta_{\text{Vividness (0)}} = -0.03, p < 0.05$). In contrast, the moderate level of vividness had a significant positive relationship ($\beta_{\text{Vividness (2)}} = 0.05, p < 0.001$). The high level of vividness was also positively related to the volume of comments ($\beta_{\text{Vividness (3)}} = 0.03, p < 0.05$). Vivid brand-posts appear more likely to attract comments vis-à-vis those that lag behind in terms of vividness, thus lending support for H2b.

With respect to shares, non-vivid brand-posts had a significant negative relationship ($\beta_{\text{Vividness (0)}} = -0.14, p < 0.001$). In contrast, the moderate level of vividness had a significant positive relationship ($\beta_{\text{Vividness (2)}} = 0.04, p < 0.01$). The high level of vividness was also positively related to the volume of shares ($\beta_{\text{Vividness (3)}} = 0.04, p < 0.01$). Vivid brand-posts appear more likely to be shared vis-à-vis those that lack vividness, thereby supporting H2c.

C. Brand-posts' Interactivity

With respect to likes, the moderate level of brand-posts' interactivity had a significant positive relationship ($\beta_{\text{Interactivity (2)}} = 0.10, p < 0.001$). However, the high level of interactivity was negatively related to the number of likes ($\beta_{\text{Interactivity (3)}} = -0.04, p < 0.01$). This suggests that brand-posts' interactivity is curvilinearly related to the volume of likes. Thus, H3a is supported.

With respect to comments, the low level of brand-posts' interactivity had a significant positive relationship ($\beta_{\text{Interactivity (1)}} = 0.04, p < 0.01$). Likewise, the moderate level of interactivity had a significant positive relationship ($\beta_{\text{Interactivity (2)}} = 0.29, p < 0.001$). In contrast, the high level of interactivity was negatively related to the number of likes ($\beta_{\text{Interactivity (3)}} = -0.03, p < 0.05$). Brand-posts' interactivity seems to be curvilinearly related to the volume of comments, thus lending support for H3b.

With respect to shares, the low level of brand-posts' interactivity had a significant positive relationship ($\beta_{\text{Interactivity (1)}} = 0.07, p < 0.001$). The moderate level of interactivity too had a significant positive relationship ($\beta_{\text{Interactivity (2)}} = 0.18, p < 0.001$). In contrast, the high level of interactivity was negatively related to the number of shares ($\beta_{\text{Interactivity (3)}} = -0.03, p < 0.05$). Brand-posts' interactivity appears curvilinearly related to the volume of shares, thus lending support for H3c. The results of testing the research hypotheses are summarized in Table II.

TABLE II
RESULTS OF THE HYPOTHESES TESTING

	Likes	Comments	Shares
Incentives	H1a: Not supported	H1b: Not supported	H1c: Not supported
Vividness	H2a: Partially supported	H2b: Supported	H2c: Supported
Interactivity	H3a: Supported	H3b: Supported	H3c: Supported

V. DISCUSSION

Three key findings are gleaned from the results. First, brand-posts that provide incentives were unlikely to become popular. Even though prior studies such as [24]-[26] suggested that provision of incentives promotes participation, such a phenomenon was not detected. In fact, it was found that brand-posts that provided incentives were less liked than those that did not. Perhaps, the provision of incentives made users suspicious about the trustworthiness of brand-posts. This contradictory finding could be attributed to the unique context of Singapore, which appears high on uncertainty avoidance. Previous studies indicate that users of different countries vary in their levels of uncertainty avoidance [33], [34]. Users of countries, which are high on uncertainty avoidance, are generally cautious in trusting the online environment. That is why, fans for brands in Singapore could be weary of incentives in brand-posts.

Second, vivid brand-posts were more likely to become popular vis-à-vis those that were found wanting in terms of vividness. This finding is generally consistent with previous studies [16], [29], [30]. In particular, it was found that non-vivid brand-posts seldom attracted likes, comments and shares. In contrast, higher levels of vividness in brand-posts triggered commenting and sharing activities, but not liking activities. Interestingly, liking could be regarded as a more superficial activity compared with either commenting or sharing. Brand-posts' vividness seems to endear users to comment and share without necessarily engaging in the more peripheral activity of liking.

Third, increase in interactivity of brand-posts resulted in increasing popularity only up to an optimum level, beyond which there was a negative association. Such a curvilinear relationship between brand-posts' interactivity and their popularity was also predicted by prior studies such as [17]. Specifically, it was found that brand-posts containing links to websites or requiring fans to vote for alternatives attracted comments and shares. Brand-posts that asked fans to take some actions were also likely to become popular. In contrast, brand-posts that solicited answers to one or more question(s) were found to deter likes, comments and shares. Fans of brand pages seem to prefer interactivity only as long as it is not overly time-consuming. After all, Facebook users not only have a lot of content to browse, but also a low barrier to switching [23]. On encountering brand-posts that require time-consuming action, it is trivial for them to switch to other content.

VI. CONCLUSION

This paper investigated the extent to which provision of incentives, as well as vividness and interactivity of brand-posts were related to their popularity in Facebook. Drawing data for brands in Singapore, it was found that brand-posts that provide incentives were unlikely to become popular. However, vivid brand-posts were more likely to become popular vis-à-vis those that lacked vividness. It was further found that there was an optimum level of interactivity for brand-posts to become popular in Facebook.

This paper is significant on three counts. First, by serving

as a dovetailing effort to the few related studies such as [12] and [17], it offers useful insights to businesses on ways to use SNS such as Facebook for marketing purposes. Guided by the findings, businesses are recommended to contribute vivid brand-posts to maximize chances of attracting likes, comments and shares. Brand-posts should be interactive. However, the entries should not require users to take part in time-consuming activities such as answering a survey.

Second, this paper examines brand-post popularity in Facebook for brands in Singapore, a city-state known for its large user base in the SNS. This was essential because till date, most management and behavioral research is conducted in western countries, and often, in North American contexts [35]. Findings from such studies might not be valid all across the globe. For example, even though prior studies expected provision of incentives to be positively related to popularity of brand-posts, such a finding could not be replicated in the context of Singapore. In fact, brand-posts that offered incentives were found less liked vis-à-vis those that did not.

Third, even though much is known about users' motivation to use SNS such as Facebook [3]-[5], relatively little is known about the factors that entice them to engage in liking, commenting and sharing activities. Through the case of brand-post popularity for brands in Singapore, this paper suggests that vividness and interactivity of posts in Facebook could be related to their likelihood to attract likes, comments and shares. Future research could consider investigating if such a finding holds good for images and videos posted by ordinary users in Facebook. Results of such studies could inform SNS users on ways to become prolific in the community.

It should be acknowledged that the findings of this paper are constrained by the nature of the dataset in two ways. First, the dataset straddled across the various levels of the categorical independent variables disproportionately. A dataset comprising comparable volume of data points across all the levels of incentives, vividness and interactivity might have allowed for a more fair analysis. Nonetheless, the non-uniform spread could not be controlled. Second, the dataset was cross-sectional in nature, thereby hindering causal inference. Therefore, the findings need to be interpreted with caution. For example, the finding that brand-posts' vividness is positively related to their popularity should not be misinterpreted as the former causing the latter. More scholarly investigation is needed to establish such a cause-and-effect relationship.

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